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227969**COMMONWEALTH OF AUSTRALIA
PATENT SPECIFICATION**

37,809/58.

Complete Specification Lodged 13th May, 1959.
Application Lodged(No. 37 809/58)..... 15th May, 1958.

Applicant (Actual Inventor)..... Keith Douglas Morris.

Complete Specification Published 19th November, 1959.
Complete Specification Accepted 10th May, 1960.

Classification 81.2.

International Classification E 04 c.

Drawing attached.

COMPLETE SPECIFICATION.**"A NEW AND IMPROVED REINFORCING CHAIR."**

The following statement is a full description of this invention, including the best method of performing it known to me:-

This invention relates to a new and improved reinforcing chair.

In reinforced concrete constructions, the reinforcing rods are supported above the bottom of formwork in any of a number of ways. The rods may be supported upon small blocks of concrete specially made to support them at the desired height above the formwork, upon which the blocks are placed at intervals. Although these blocks have the advantage that, when the concrete is poured subsequently into the formwork, they become an integral part of the concrete construction, they have the disadvantage that the making of these blocks, ordinarily done on the job, takes a considerable amount of time and skilled labour, and consequently this manner of supporting the reinforcing rods is unduly expensive.

It is also known to support the reinforcing rods upon supporting chairs built up of metal rod pieces welded together; but these reinforcing chairs are bulky and awkward for a workman to carry about in any number and when a floor and ceiling unit, for example, is constructed in reinforced concrete by the use of such reinforcing chairs, parts of the metal rod chairs are likely to be visible from below the ceiling, and must, of course, be covered by subsequent plastering or like treatment.

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The present invention has been devised to overcome the said present disadvantages, and some of the main objects of the invention are to provide reinforcing chairs which are particularly simple and economical to manufacture, which are particularly compact and thus very convenient for a workman to carry about but which are none the less very sturdy and durable, and which are such that, if any part of them should be exposed in a finished construction, for example below a ceiling construction, they will not necessarily require to be plastered over, being neither liable to corrosion, nor conspicuous nor unsightly. With this end in view, the chairs of the invention are integrally moulded of plastic material. It is not possible to mould in plastic an exact copy of the known wire chairs mentioned above, both because such chairs would be too flimsy and because their shape is unsuitable to molding operations. The invention therefore envisages the adoption of a chair having four co-joined similar equally spaced radiating vanes, with a dished structure formed by the top edges of the vanes to form a seating for a reinforcing rod.

By the adoption of this modified shape, a successful plastic chair, with its accompanying advantages, may be made.

The vaned shape is eminently suitable to plastic moulding techniques and at the same time gives the necessary strength to the chair.

Other features of the invention will become apparent from the following description.

In order that a preferred embodiment of the invention may be readily understood and carried into practical effect, reference is now made to the accompanying drawings, wherein:

Fig. 1 is a perspective view of a reinforcing chair according to the invention, and

Fig. 2 is a plan view of the reinforcing chair.

The reinforcing chair shown in the drawings is moulded, as a single element of a plastic material, and is of cruciform shape in plan view, having four similar wings or vanes 10, which are somewhat tapered, from the bottom to the top.

The outer top part 11 of each of the wings or vanes 10 inclines downwardly towards the middle of the device, but the cruciform inner top part 12 of the chair is plane and normally substantially horizontal.

The inner part of each of the wings or vanes 10 is fairly deeply recessed from the bottom, so that the device is formed with four legs 13, each of which increases in width, but decreases in depth, towards the bottom.

In use, the requisite number of such reinforcing chairs are stood in appropriate positions upon formwork for a concrete construction, and reinforcing rods are laid upon the chairs; or the chairs may be slipped under the arrangement of reinforcing rods

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after they have been installed, the chairs, resting on the formwork, holding the reinforcing rods spaced the required distance therefrom above. Owing to the construction of the tops of the reinforcing chairs, the outer parts of the tops of the wings or vanes 10 inclining inwardly and downwardly, the chairs are more or less self-centering. That is to say, if, as is usual, a reinforcing rod lies across more than one of the wings or vanes 10 of a chair, the chair will tend to move to such position that the reinforcing rod lies more or less diagonally across its top. At the same time, if a chair should be positioned relative to a reinforcing rod so that the reinforcing rod lies across only one of the wings or vanes 10, the rod will still be adequately supported; and in any case the reinforcing rod will seat firmly in the recessed top part of the chair. The chairs, moreover, are of such construction that they provide good support for reinforcing rods of a very wide range of diameters. Reinforcing rods may be secured to reinforcing chairs according to the invention by means of tie wires passing around the reinforcing rods and through the recessed lower parts of the chairs, preferably diagonally. Each reinforcing chair rests firmly upon its four legs 11 and, because of the small areas of the bottoms of these legs, the chair will sit firmly upon the formwork despite minor irregularities in the surface thereof.

When concrete has been poured into the formwork and has set, and the formwork has been removed, no more of each chair will be visible from below than the four small lower ends of its legs 11. These small parts of the chair will not be unsightly and, as the chair is made of a plastic material not liable to corrosion, it will not be necessary for these small visible parts to be plastered over.

As chairs according to the invention are of very compact size, and moreover are very light, though strong and durable, a workman will be able to carry a considerable number of them without inconvenience, and therefore a considerable amount of time and labour will be saved in the building of reinforced concrete constructions.

Reinforcing chairs for reinforced concrete constructions made according to the invention will be found to be very effective in achieving the objects for which the invention has been devised. It will be understood, of course, that the particular embodiment of the invention herein described may be subject to minor modifications of constructional detail and design without departing from the spirit and scope of the invention as defined by the appended claims.

The claims defining the invention are as follows:-

1. A reinforcing chair including four co-joined similar equally spaced radiating vanes, moulded integrally

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of plastic material, the top edges of the said vanes forming a seating for a reinforcing rod dished inwards towards the junction of the vanes.
(15th May, 1958).

2. A reinforcing chair according to Claim 1 wherein each vane is formed with an integral leg extending downwardly from its radially outer bottom edge, the reinforcing chair being adapted to stand upon the said legs.
(15th May, 1958).

3. A reinforcing chair according to Claim 2 wherein the vanes and legs increase in width from top to bottom.
(15th May, 1958).

4. A reinforcing chair substantially as herein described with reference to the accompanying drawings.
(15th May, 1958).

G. R. CULLEN & COMPANY.
Patent Attorneys for Applicant.

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<u>Serial No.</u>	<u>Application No.</u>	<u>Classification.</u>
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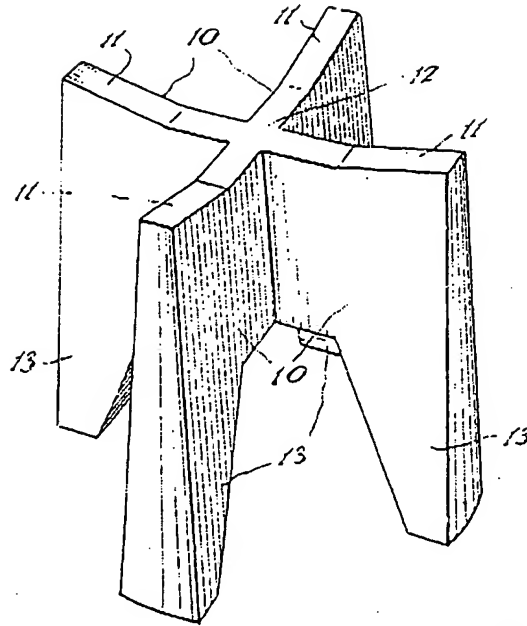


FIG. 1.

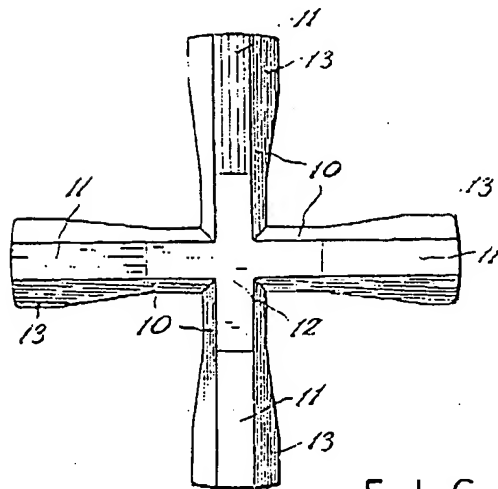


FIG. 2.